

South Dakota School of Mines and Technology
Department of Computer and Mathematical Sciences

Math 373

14_ODE

1. Use MATLAB[®] to solve the following problem.
A rocket of mass 100 kg and 1000 kg fuel burns fuel at a rate of 20 kg/s. If the rocket engine produces a constant thrust that exceeds the initial system weight (of the 1100g Newtons) by 4 percent, how high will the rocket go and what will be its maximum velocity? Do not forget that it will coast up after the fuel is consumed.